IN THE CLAIMS:

1-25. (Cancelled)

26. (New)   A method for simultaneously assaying the activities of multiple kinases in a cell-signaling pathway, the method comprising the steps of:

providing in a reaction mixture a set of kinase substrates under conditions effective to convert a kinase substrate in the set to a corresponding product in the presence of the kinase for that substrate, where (i) each kinase substrate and the product of that kinase substrate have different separation characteristics from each other and from the other kinase substrates in the set and their corresponding products and (ii) each kinase substrate and its corresponding product have a detection moiety capable of producing a detectable signal;

separating the kinase substrates and products in said reactions in a single separation medium;

detecting, for each separated product, a separation characteristic effective to identify that product and a signal related to the amount of the product; and

determining, from the detected separation characteristic and signal detected for each product, the amount of each kinase substrate converted to the corresponding product in said reaction mixture.

27. (New)   The method of claim 26 wherein said separation characteristic of said kinase substrates and said products is electrophoretic mobility, and said separating includes separating said kinase substrates and corresponding products within an electrophoretic medium under the influence of an applied electric field.

28. (New)   The method of claim 27 wherein said kinase substrates and corresponding products are separated by capillary electrophoresis.

29. (New)   The method of claim 26 wherein said detecting further includes detecting, for each of said kinase substrates, a separation characteristic effective to identify that kinase substrate and a signal related to the amount of the kinase substrate.

30. (New)   The method of claim 26 wherein said substrates and corresponding products are fluorescently labeled, and said detecting includes detecting the fluorescent signal from each product when irradiated with a fluorescence excitation wavelength.

31. (New)   The method of claim 26 for use in determining the levels of activity of each of a plurality of different kinases in a cell, under selected cell conditions, wherein said different kinases in said reaction mixture are obtained from said cell under such selected cell conditions.

32. (New)   The method of claim 31 for determining changes in the levels of activity of each of a group of kinases in a cell, in control and test cell conditions, wherein said steps of providing, separating, detecting, and determining are carried out for kinases obtained from the cells at the control and test conditions.

33. (New)   The method of claim 31 for determining changes in the levels of activity of each of a group of kinases in a cell, when the cell is exposed to an agent known or being tested for its ability to inhibit or activate the level of the activity of one or more of said different kinases, wherein said steps of providing, separating, detecting, and determining are carried out for kinases obtained from the cells before and after exposure to said agent.

34. (New)   The method according to claims 26, 27, 28, 29, 30, 31, 32, or 33 wherein said multiple kinases include kinases selected from the group consisiting of ERK kinase, S6 kinase, P38 kinase, Abl kinase, cyclic nucleotide-regulated protein kinase, protein kinase C, kinase regulated by Ca2+/CaM, cyclin-dependent kinase, protein-tyrosine kinase, Src kinase, JNK, MAP kinase, P53 kinase, platelet-derived growth factor receptor, epidermal growth factor receptor, and MEK.

35. (New)   The method of claim 34 wherein said multiple kinases include kinases selected from the group consisiting of ERK kinase, S6 kinase, P38 kinase, Abl kinase.